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INDIAN RAILWAYS: A WHEEL FOR ECONOMIC DEVELOPMENT

Dilip Kumar Jha
Assistant Professor,
Department of Economics,
Guru Ghasidas Vishwavidyalaya,
Koni, Bilaspur, Chhattisgarh, Pin-495009
Mobile No:- 099260-03033
E-mail: jhadilip.ggv@gmail.com

ABSTRACT:
This study explains the role of the Indian Railways in the economic development of the Nation. The Indian economy is chugging merrily on to the green zone warming the coalholes of all our Indian hearts. The vagaries of nature resulting in unpredictable monsoon, frequent rise in petrol and steel prices have come in the way as a determent to the steady growth of our economy but there is one sector that stands tall and is truly mammoth-it is none other than the Indian railways. As a result, India has recorded a growth rate which is second when compared to China.

1. INTRODUCTION:

Man has always wanted to be on the move. With the invention of the wheel matters were simplified. Around five hundred years ago, miners in Europe used wooden rails on which the wheels of carts were guided. The invention of the steam engine in 1705 by Newcomen and its further development by James Watt led to the steam locomotive which was first built by Richard Trevithick in 1801.

A plan for a rail system in India was first put forward in 1832. The first rail line of the Indian sub-continent came up near Chintadripet Bridge (presently in Chennai) in Madras Presidency in 1836 as an experimental line. In 1837, a 3.5-mile (5.6 km) long rail line was established between Red Hills and stone quarries near St. Thomas Mount. In 1844, the Governor-General of India Lord Hardinge allowed private entrepreneurs to set up a rail system in India. The East India Company(and later the British Government) encouraged new railway companies backed by private investors under a scheme that would provide land and guarantee an annual return of up to five percent during the initial years of operation. The companies were to build and operate the lines under a 99 year lease, with the government having the option to buy them earlier. Two new railway companies, Great Indian Peninsular Railway (GIPR) and East Indian Railway (EIR), were created in 1853-54 to construct and operate two 'experimental' lines near Bombay and Calcutta respectively.[8] The first train in India had become operational on 22 December 1851 for localised hauling of canal construction material in Roorkee. A year and a half later, on 16 April 1853, the first passenger train service was inaugurated between Bori Bunder in Bombay and Thane. Covering a distance of 34 kilometres (21 mi), it was hauled by three locomotives,Sahib, Sindh, and Sultan. This was soon followed by opening of the first passenger railway line in North India between Allahabad and Kanpur on March 3, 1859.

At the beginning of the twentieth century India had a multitude of rail services with diverse ownership and management, operating on broad, metre and narrow gauge networks. In 1900 the government took over the GIPR network, while the company continued to manage it. With the arrival of the First World War, the railways were used to transport troops and foodgrains to the port city of Bombay and Karachi en route to UK, Mesopotamia, East Africa etc. By the end of the First World War, the railways had suffered immensely and were in a poor state. In 1923, both GIPR and EIR were nationalized with the state assuming both ownership and management control.

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The Second World War severely crippled the railways as rolling stock was diverted to the Middle East, and the railway workshops were converted into munitions workshops. After independence in 1947, forty-two separate railway systems, including thirty-two lines owned by the former Indian princely states, were amalgamated to form a single unit named the Indian Railways. As the economy of India improved, almost all railway production units were 'indigenised' (produced in India). By 1985, steam locomotives were phased out in favour of diesel and electric locomotives. The entire railway reservation system was streamlined with computerisation between 1987 and 1995.

In 2003, the Indian Railways celebrated 150 years of its existence. Various zones of the railways celebrated the event by running heritage trains on routes similar to the ones on which the first trains in the zones ran. The Ministry of Railways commemorated the event by launching a special logo celebrating the completion of 150 years of service. Also launched was a new mascot for the 150th year celebrations, named "Bholu the guard elephant".

2. INDIAN RAILWAY ZONES

Indian Railways is divided into zones, which are further sub-divided into divisions. The number of zones in Indian Railways increased from six to eight in 1951, nine in 1952, sixteen in 2003[1] and finally 17 in 2010. Each zonal railway is made up of a certain number of divisions, each having a divisional headquarters. There are a total of sixty-eight divisions.

Each of the seventeen zones, including Kolkata Metro, is headed by a General Manager (GM) who reports directly to the Railway Board. The zones are further divided into divisions under the control of Divisional Railway Managers (DRM). The divisional officers of engineering, mechanical, electrical, signal and telecommunication, accounts, personnel, operating, commercial and safety branches report to the respective Divisional Manager and are in charge of operation and maintenance of assets. Further down the hierarchy tree are the Station Masters who control individual stations and the train movement through the track territory under their stations' administration.

3. INDIAN RAILWAYS RECRUITMENTS AND TRAINING

With approximately 1.6 million employees, Indian Railways is the world's single largest employers.[1] Staff are classified into gazetted (Group A and B) and non-gazetted (Group C and D) employees.[1] The recruitment of Group A gazetted employees is carried out by the Union Public Service Commission through exams conducted by it. The recruitment to Group 'C' and 'D' employees on the Indian Railways is done through 19 Railway Recruitment Boards which are controlled by the Railway Recruitment Control Board (RRCB). The training of all cadres is entrusted and shared between six centralised training institutes.

4. INDIAN RAILWAY TRACK AND GUAGE

Indian railways uses four gauges, the 1,676 mm (5 ft 6 in) broad gauge which is wider than the 1,435 mm (4 ft 8 ½ in) standard gauge; the 1,000 mm (3 ft 3 ⅜ in) metre gauge; and two narrow gauges, 762 mm (2 ft 6 in) and 610 mm (2 ft) . Track sections are rated for speeds ranging from 75 to 160 km/h (47 to 99 mph).

The total length of track used by Indian Railways was about 114,000 km (71,000 mi) while the total route length of the network was 64,215 km (39,901 mi) on 31 March 2011. About 33% of the route-kilometre and 44% of the total track kilometre was electrified on 31 March 2011.

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Broad gauge is the predominant gauge used by Indian Railways. Indian broad gauge—1,676 mm (5 ft 6 in)—is the most widely used gauge in India with 102,000 km (63,000 mi) of track length (90% of entire track length of all the gauges) and 54,600 km of route-kilometre (85% of entire route-kilometre of all the gauges) on 31 March 2011.

In some regions with less traffic, the metre gauge (1,000 mm/3 ft $3\frac{3}{8}$ in) is common, although the Unigauge project is in progress to convert all tracks to broad gauge. The metre gauge had about 9,000 km (5,600 mi) of track length (7.9% of entire track length of all the gauges) and 7,500 km of route-kilometre (11.6% of entire route-kilometre of all the gauges) on 31 March 2011.

The Narrow gauges are present on a few routes, lying in hilly terrains and in some erstwhile private railways (on cost considerations), which are usually difficult to convert to broad gauge. Narrow gauges had a total of 2,400 route-kilometre on 31 March 2011. The Kalka-Shimla Railway, the Nilgiri Mountain Railway and the Darjeeling Himalayan Railway are three notable hill lines that use narrow gauge.[16] Those three will not be converted under the Unigauge project.

The share of broad gauge in the total route-kilometre has been steadily rising, increasing from 47% (25,258 route-km) in 1951 to 85% in 2011 whereas the share of metre gauge has declined from 45% (24,185 route-km) to less than 12% in the same period and the share of narrow gauges has decreased from 8% to 3%. However, the total route-kilometre has increased by only 18% (by just 10,000 km from 53,596 route-km in 1951) in the last sixty years. This compares very poorly with Chinese railways, which increased from about 27,000 route-km at the end of second world war to about 100,000 route-km in 2011, an increase of more than threefold. More than 28,000 route-km (34% of the total route-km) of Chinese railway is electrified compared to only about 21,000 route-km of Indian railways.

Double decker AC trains have been introduced in India. The first double deckar train was Flying Rani introduced in 2005 while the first double decker AC train in the Indian Railways was introduced in November 2010, running between the Dhanbad and Howrah stations having 10 coaches and 2 power cars.

Sleepers used are made of prestressed concrete, or steel or cast iron posts, though teak sleepers are still in use on few older lines. The prestressed concrete sleeper is in wide use today. Metal sleepers were extensively used before the advent of concrete sleepers. Indian Railways divides the country into four zones on the basis of the range of track temperature. The greatest temperature variations occur in Rajasthan.

5. TRACTION:

As of 31 March 2011, 21,014 km of the total 64,215 km route length is electrified. Since 1960, almost all electrified sections on IR use 25,000 Volt AC traction through overhead catenary delivery. A major exception is the entire Mumbai section, which uses 1,500 V DC and is currently undergoing change to the 25,000 V AC system. Another exception is the Kolkata Metro, which uses 750 V DC delivered through a third rail.

Traction voltages are changed at two places close to Mumbai. Central Railway trains passing through Kasara and Karjat switch from AC to DC using a neutral section near Kalyan. Western Railway trains switch power on the fly, in a section near Dahisar, where the train continues with its own momentum for about 30 m through an unelectrified section of catenary called a dead zone. All electric engines and EMUs operating in this section are the necessary AC/DC dual system type (classified "WCAM" by IndianRailways).

6. ANALYSIS OF PLAN EXPENDITURE OF RAILWAYS:

The Rolling Stock was 30.25%. It took the decreasing pace in eighth plan(1992-97) to 28.76% which further reduced to 13.27 in ninth plan(1997-02). Finally in eleventh plan it reduced to 12.71%. New lines constructed and capacity work was 20.15% from 1950-90,which got the speed of rocket in eleventh plan(2007-10) to

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35.53%. Similarly, the percentage of track and bridges was 22.08% which touched the land by eleventh plan(2007-10) to 13.64%. As electrification was 6.23% in 1950-90. This was reduced to 3.71 by eleventh plan.

INDICES OF GROWTH OF TRAFFIC OUTPUT AND INPUTS.

YEAR	TOTAL OUTPUT INDICES		INVESTMENT INPUT INDICES				
	Freight Traffic (NTKms)	Passenger Traffic(non-sub-urban passenger kms)	Wagon capacity	Passenger coaches	Route kms	Running Track kms	Tractive effort of locus
1950-51	100	100	100	100	100	100	100
1960-61	199	110	152	154	105	107	144
1970-71	289	159	226	188	112	121	178
1980-81	359	279	269	210	114	128	201
1990-91	550	394	278	219	116	133	192
2000-01	715	614	246	254	118	138	233
2006-07	1,094	972	243	297	118	144	281
2007-08	1,185	1,084	247	311	118	144	292
2008-09	1.251	1,189	283	321	119	147	310
2009-10	1,363	1,288	299	332	119	147	322

SOURCE:MINISTRY OF RAILWAYS.

7. INFERENCE FROM THE TABLE.

In Indian railways, Traffic includes both Freight Traffic and Passenger Traffic. In the Table above, there is the detailed study of Indices of Growth of Traffic Output and Inputs from Independence to till date. Input Indices includes the wagon capacity, passenger capacity, route, running track and tractive effort of locos. There is increase in all the Input Indices from 1950-51 to 2009-10. Increase in input devices also increased the Traffic output indices, which shows the tremendous growth in the Indian Railways Traffic which is revenue to the government.

8. CONCLUSION:

The seed of Indian Railways was sown by the alien group, but it is sustaining the millions of staff and their families. It is providing all the amenities to the staff and playing the dominant role in the economic development in the country. It is undertaking all the major projects of connecting one sub-urban place to the other. It is

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making the transport service cheaper. There are many private sectors like Rail Vikas Nigam limited, which is undertaking the developmental works of Railways like constructing of rail tracks and allotting the finished work to public sector railways. It is also helping the people through compensatory ways like providing pension, training and jobs on compensatory basis in case of death of the respective railway staff. Every year, Railway Budget gives the surplus Budget and shows the greatest developmental works. Among the 17th zones, south east central railways shows the best output as compared to other zones.

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